Exhibit "16"

IN THE UNITED STATES DISTRICT COURT

IN AND FOR THE WESTERN DISTRICT OF WASHINGTON

AT TACOMA

BRYCE MEYER, individually and as the representative of all persons similarly situated
 	
                         Plaintiff,
 	
        vs.
 	
AMERICAN FAMILY MUTUAL INSURANCE COMPANY and AMERICAN STANDARD INSURANCE COMPANY OF WISCONSIN, foreign insurers;
 	
                         Defendants.
	Case No.: 3:14-CV-05305-RBL
	
	DECLARATION OF BERNARD R. SISKIN, Ph.D.

I, Dr. Bernard R. Siskin, state under penalty of perjury as follows:

1.   I have been retained in this matter to provide opinions on (a) the feasibility of preparing a model to demonstrate the presence of Class wide damages and injury due to diminished value, (b) to measure the loss in retail value of the vehicles in the proposed Class due to diminished value, and then (c) to determine how to apply the same method in a post

Plaintiff's Motion for Class Certification - 4

verdict distribution process. It is my professional opinion to a degree of professional and scientific certainty that all three tasks can be done.

2.   I have provided opinions, and been deposed, in a number of prior diminished value cases. My work has involved two different steps. The first step ("the regression analysis") involved gathering data at auto auctions through visual inspections of vehicles to determine their objective characteristics and if they were undamaged vehicles or vehicles with properly repaired yet detectable areas of repair. I then did a statistical regression analysis of their auction sales prices to determine if there was "diminished value", and if so, what it statistically interacted with. The second step ("modeling the Class") then involved applying the results of the regression analysis to a particular Class via a sampling of claims files to determine the total Class wide damages through aggregating the individual damages of those in the sample, and addressing any issues that might reduce damages in an individual case, such as prior overlapping damage.

3.   I have provided detailed declarations, and then been deposed, in prior cases which detail the work done on both of these steps. Attached hereto as Attachment A is a true and correct copy of my April 28, 2003 Declaration in *Moeller v. Farmers*. Paragraphs 2-8 of Attachment A describes the process and results of my regression analysis study. In summary, I found that the existence and amount of Diminished Value was correlated in a statistically significant way with the presence of properly repaired frame/structural damage and/or the presence of properly repaired damage to areas of the vehicle (which I shall call "hits"). The more extensive the damage, the greater the loss in value of the vehicle from its projected value.

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4.   After I had completed my initial data analysis, the results were tested by experts hired by Allstate (Mr. Samuals and Dr. Robert E. Hall)[1]. Considering additional data they obtained from sources not available to me when I conducted my regression analysis, I corrected several data points, and re-ran the regression. The regression which best fit the supplemented data showed that the presence of frame/structural damage reduced a vehicle's pre-loss value by 4.56%, and that each area of damage ("hit") reduced the vehicle's pre-loss value by 1.59%. These results apply to, and did not intereact with, vehicles with different physical characteristics (make, model, etc) captured in the regression analysis.

5.   To obtain a Class Wide estimate of damages, I can then take the results of this regression analysis and applied them to a sample of claims obtained from a defendant. The process to do this is described in my May 16, 2013 Supplemental Disclosure in *Janhunen (Moeller) v. Farmers*. A true and correct copy of this disclosure is attached hereto as Attachment B.   As shown in that declaration, it was (and is in this case) possible to obtain a reliable estimate of Class Wide Damages, and to apply the same formula (as is done in the Moeller sample) to individual estimates of loss.   It is further possible, as in Moeller, to account for the presence of any prior overlapping accidents in calculating the Class wide damages, and then to apply the same methods to individual claims.

6.   I have further addressed issues raised by subsequent experts hired by insurance carriers, and further described my work in my December 2, 2013 and February 7, 2014 Declarations in *Mansker v. Farmers Ins. Co.of WA*, a true and correct copy of which are attached hereto as Attachments C and D, and in my March 7, 2014 Decleration in *Merrill v. PEMCO*. A true and correct copy of the this declaration is attached hereto as Attachment E.

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[1] In addition my work has been reviewed by amongst others, Dr. Finis Welch (hired by Farmers), Dr. Daniel L. Rubenfeld (hired by Farmers), and Dr. Robert C. Marshall (hired by PEMCO and Farmers)

7. My opinions in this case are consistent with, and incorporate, those provided in Attachments A-E, and my depositions in *Mansker*, *Merrill*, and *Moeller*.

8. I have been provided and reviewed the November 6, 2014 deposition of American Family's corporate designee Wade A Nielson. Based upon his testimony (id. at 67-72) and my knowledge from prior cases as to the availability of estimating data, the information necessary to model the Class is available in a computerized format from American Family and its estimating system Audatex, and modeling the Class will present no difficulties. A valid and accurate Class wide damage calculation as was done in *Moeller* can be prepared in this case, and then the formula used to determine those damages can be applied on a claim by claim based in a distribution phase if it is needed.

9. The factors which my regression analysis study found interact with the amount of diminished value (extensiveness of damage, and the presence of frame/structural damage) are the same factors that American Family uses in its assessments and that Mr. Nielson testified interacted. See e.g. Id. at 31-32, 36. However, as my regression analysis shows, the "maximum" loss in value set by American Family of 10% (from which deductions can be, and are taken by American Family) does not reflect the actual market loss of vehicles, which is often (and given how the Audatex tool works, almost always) well below the actual market value loss.[2]

10. Mr. Nielson further testified that American Family determines pre-loss value using NADA clean retail values, and settles the loss as of the time of the accident. See e.g. Id.,

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[2] Notably, Mr. Nielson testified that American Family has no information to validate the accuracy of the Audatex Diminished Value estimates it uses, nor the 10% cap it uses. Id. at 52-5, 253

Plaintiff's Motion for Class Certification - 7

at 18, 23.[3]   This is consistent with the assumptions underlying my application of my regression analysis to model the Class, and is what can be done in this case.

11.   As more fully discussed in the Attachments hereto and my depositions, the work done, and the challenges made by insurance company experts reviewing my work has simply validated, and served to peer review my auction data regression analysis. The regression model can be accurately and appropriately applied to this case by using a sample of the claims of members of the proposed Class.

12.   The same approach used to model the Class can be applied to any individual member of the Class, either in the sample of claims, or in a claims process. For example, I understand that Mr. Meyer's vehicle had a NADA clean retail value of $24,225 at the time of the accident (its pre-loss value). I understand that his vehicle suffered frame/structural damage, and had eleven areas of damage using the same codes we used in our regression analysis. As such his vehicle will have lost 22.05% of its value ($5,341.61) due to the damage to his vehicle. If one includes the additional repainting of the roof, subsequent to the initial repairs, his vehicle will have lost 23.64% of its value ($5,726.79) due to the damage to his vehicle.

13.   The forgoing is true and correct, and if call to, I could testify competently to the contents herein and in the Attachments.

DATED this 15th day of December 2014, at Philadelphia, Pennsylvania.

Bernard R Siskin

_____
Dr. Bernard R. Siskin

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[3] Mr. Nielson also again confirmed what I understand, which is that before buying or selling a vehicle, dealers inspect for prior repaired damage. Id. at 34. This was the process we used at auction. As such our model determines, as I have testified before, the differences in vehicle value from pre-accident (undamaged) condition, due to detectible and identifiable differences in repaired vehicles. As such the model, which shows more loss in value, as the extensiveness of prior damage increases, reflects tangible differences in the vehicles not "stigma" loss as I understand that term to have been used in *Moeller v. Farmers*.

Law Offices of STEPHEN M. HANSEN, P.S.
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(253) 302-5955/(253) 677-6416/(253) 301-1147 FAX

Exhibit "A"

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR THE COUNTY OF PEIRCE

DAVID MOELLER, on behalf of himself and
all others similarly situated,

        Plaintiff,

        v.

FARMERS INSURANCE COMPANY OF
WASHINGTON and FARMERS
INSURANCE EXCHANGE,

        Defendants.

Case No. 99-2-07850-6

## EXPERT DISCLOSURE OF DR. BERNARD SISKIN Ph.D.

1.   I provide this Supplemental Disclosure to update the Court and Parties of my work in this case, and my conclusions, and basis therefore. I reserve the right to further supplement this disclosure, if and when, I receive further information.

2.   To determine if diminished value exists, and calculate its amount, I sought to obtain a single data set that: (1) provided objective information on the subject vehicles, e.g., make, model, mileage, options; (2) provided information on whether the subject vehicles had been damaged and if so, how extensively; (3) provided information on whether the subject vehicles had been "properly" repaired (i.e., had no "repair related" DV); and (4) provided a market sale price for the subject vehicles.

3.   As I have described in my prior report in this case, I observed that data from auto auctions is frequently used in studying valuation issues. This is because there are large numbers of buyers and sellers as well as large numbers of cars that can be studied. Auctions are also a primary source of data for the major evaluation guides including the Blue Book Used Car Guide and the NADA Blackbook. Auctions also allow an opportunity to gather information on vehicles prior to their sale without the observer's presence in the auction process biasing the results, i.e., introducing a "survey bias."

4.   To collect a single data set at auction, in consultation with two consulting experts, Dr. Will Guild and James Duffy I developed a study protocol. Data collectors, who were

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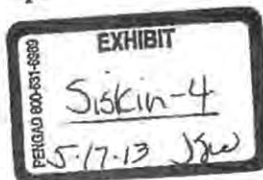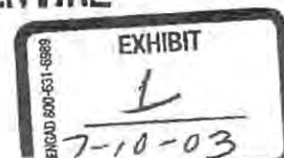
experienced with auto body repair techniques, were trained in this protocol and an inter-rater reliability study was done. The inter-rater reliability study showed that the data collectors and study protocol gathered the targeted variables consistently. The data collectors were then sent to geographically dispersed auto auctions where they inspected all vehicles that fell within the parameters of the class and that were pre-disclosed as being damaged. The data collectors also inspected large numbers of randomly selected vehicles to find both vehicles which might have had undisclosed damage and undamaged vehicles to be used as comparators. The coders: (i) recorded all objective information about the vehicle (e.g., make, model, mileage), which I, in consultation with subject matter experts, had determined *might* have a relationship to value; (ii) inspected to see if the vehicle had been wrecked and, if so, recorded where and how the vehicle had been damaged; (iii) checked the quality of any repairs to see if they were "proper" (i.e. the type of repairs that are typically performed and that insurance carriers pay for and consider a complete repair) and; (iv) finally, inspected the vehicle for additional disamenities which might reduce the value of the vehicle, (e.g., unrepaired damage). To insure that the data set did not inadvertently include vehicles that had been improperly repaired, the protocol was designed so that a second inspector inspected every vehicle that was found to be damaged and repaired, to see if the second inspector concurred with the first inspector's determination that the vehicle had been "properly" repaired. The sales prices of the vehicles at auction were then gathered.

5.   Once the data had been gathered, under my direction, Dr. Guild and James Duffy coded the data and removed from the data set vehicles that fell outside of the class, e.g., over 90,000 miles or more than 6 years old. I then removed from the data set any vehicle that had other disamenities that might have affected the sales price, (e.g., unrepaired damage and improperly repaired damage). In addition, my staff researched and added to the database the Blue Book values for each of the data set vehicles.

6.   Using regression analysis on this data set, I explored the extent to which the measured variables, including those measuring damage and repair to the vehicle, affected price. I found that the variables relating to frame damage and the number of areas in which the vehicle had been

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damaged, (i.e., the observable severity of damage) statistically significantly diminished the auction sale price of the vehicle. Furthermore, I found that the affects of these variables did not interact with any of the other characteristics that affected the auction sale price.

7.   The results of this regression analysis showed that, for every area of damage, (e.g., hood, front fender, etc.) a vehicle lost approximately 1.6 percent of its value. If the vehicle had also suffered frame or structural damage it lost an additional approximately 4.5 percent of its value. I have calculated that a predictive model based upon this data has an adjusted R^2 of .934. These results are highly significant: the probability of the damage variables observed occurring by chance, that is, that they did not truly diminish the value of the vehicle, is less than 0.001.

8.   These auction survey results upon which I am relying, provide a framework that I could apply to the class through a sampling of the class members. Based on my regression one should estimate that the value of a vehicle would decline by 4.5 percent if there is frame damage and an additional 1.6 percent per area of damage. In order to apply this approach to the class members' vehicles, one must identify: (i) the average value of the vehicle absent any accident damage; (ii) on average, how often as a result of the accident did vehicles suffer frame or structural damage; and (iii) the average number of areas of the vehicle damaged in the accident. In addition, one would have to determine on average how often vehicles would have suffered collision damage to their frame or structural components in areas in which the vehicle had previously been damaged (e.g. a vehicle had been damaged in the hood and left fender in a prior accident, and a second accident damages the same area of the vehicle without causing any additional damage). This is necessary because diminished value occurs at the moment of the first impact. Subsequent frame/structural damage or repeat damage to the same area of the vehicle (as contrasted to damage to different areas or additional areas of the vehicle) does not result in any additional loss in value.

9.   I identified a random sample of claim files to determine the class characteristics, (e.g., the average value of the cars in the class and the average severity of the damage to them and any over-inclusion in the Class list). These Claims files were requested from Defendant, and a sample of those produced were reviewed under the direction of my staff. The Blue Book values of the

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vehicles were determined[1] and recorded in addition to whether or not frame/structural damage was suffered and the number of areas of damage[2]. In addition, data were obtained to determine the likelihood that a vehicle with frame/structural damage had previously been in an accident and suffered frame/structural damage, and the likelihood that the affected areas of the vehicle had been previously damaged. From these data, one can calculate the amount of diminished value experienced by taking the value of the vehicle times the estimated effect of the damage it incurred, (i.e. approximately 4.5 percent if the vehicle sustains frame/structural damage plus 1.5669 percent for each area of the vehicle damaged). This is then summed over all vehicles in the sample and then discounted by the likelihood of overlapping prior damage. This number represents the average loss per class member as a result of the insurance practice at issue. Multiplying by the number of class members yields the amount of class-wide damages.

10.   I requested 2,000 files. A thousand of those requested were selected for study. Of these 1,000, Farmers' could produce only 900 files. Reviewing these files, it was determined that 80 percent of them were within the class definition and 20 percent were outside the class definition. *709* *657* The Blue Book value, whether or not frame damage occurred and the number of locations could be determined for 639 of those received. These constituted the database for the analysis.

11.   In computing Blue Book value, we used the "retail excellent" value in the Kelly Blue Book Official Guide associated with the year and month of the accident[3]. The "trade-in-good" value used in the model building was not available historically. Therefore, I drew a sample of 100 cars studied in the model building and recorded both the retail excellent value and the trade-in-good value. I found that one can estimate to a reasonable degree of certainty the trade-in-good value from

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[1]   Confirmation of Blue Book values is ongoing. I do not expect any changes to affect my conclusions but, when completed, a revised supplemental disclosure may be issued.

[2]   Confirmation of these values is ongoing. I do not expect any changes to affect my conclusions but, when completed, a revised supplemental disclosure may be issued.

[3]   When the car was too new to appear in the Blue Book for that year, we used the first Blue Book in which that year's car appeared. This would tend to underestimate the value.

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the retail excellent value and the age of the car. One is able to predict the trade-in-value with an R^2 value of 0.991. In computing my estimate of class damages, I rely on the lower, more conservative estimate of trade-in-value rather than the retail excellent value. Based on the values of and damage to the (595) sample cars, I estimate the loss per claim to be $890.

12.   Farmers identified 53,180 potential claims. Of these, I estimate that 42,544 (80 percent of 53,180) represent claims within the scope of the class. If we assume that all 42,544 claims represent unique damage (i.e., the first time the vehicle was damaged or the vehicle experienced no previous similar damage to the same location or to the frame), then classwide damages would be $890 x 42,544 or $37,864,160.

13.   However, as discussed above, to the extent that prior damage to the car overlaps with current damage, a discount must be made. Using the data on accidents from auctions that were used to develop the model, I am able to compute the likelihood that, given a prior accident, the number of spots currently damaged had been damaged previously. The data show:

<div align="center">

Given a Prior Accident

Probability of Prior Frame Damage = 0.102 and

</div>

Probability of Overlap	Spots Damaged						
	1	2	3	4	5	6	7
1	0.094	0.359	0.426	0.428	0.409	0.376	0.340
2	—	0.061	0.146	0.193	0.235	0.281	0.307
3	—	—	0.017	0.037	0.067	0.111	0.149
4	—	—	—	0.003	0.010	0.024	0.042
5	—	—	—	—	0.001	0.003	0.006
6	—	—	—	—	—	0.000	0.001
7	—	—	—	—	—	—	0.000

These data, combined with the probability of a damaged car being in a prior accident, will allow me to calculate the discount for accidents.

14.   Of the potential claims, the percent of claims for which the policy number and model year of the car were unique is 84.9 percent. Thus, assuming that multiple claims on the same policy and on the same model year represent multiple claims on the same car, then at least 15.1 percent of

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the cars were involved in multiple accidents. However, to be able to determine the likelihood of a car being in a prior accident, I need data on the average policy life and the policies in force per period. I have requested these data and, when received, I will be able to compute the appropriate discount for prior accidents.

Bernard R. Siskin

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Bernard R. Siskin, Ph.D.
Dated: April 28, 2003

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CONFIDENTIAL

Exhibit "B"

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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON

IN AND FOR THE COUNTY OF PIERCE

8   CURTIS JANHUNEN, et al, on behalf of   NO. 99-2-07850-6
   themselves and all others similarly
9   situated,

10   SUPPLEMENTAL DISCLOSURE OF DR.
                    Plaintiffs,   BERNARD SISKIN, Ph.D.
11

12 vs.

13 FARMERS INSURANCE COMPANY
    OF WASHINGTON and FARMERS
14 INSURANCE EXCHANGE,

15   Defendants.

16

17   1. I provide this supplemental disclosure to update the work which is described in my April

18   28, 2003 report.

19

20   2. After the date of that report, I received further information which suggested that there

21   were coding errors in my auction data set, in specific that sales prices were incorrect on

22   13 cars and there were 5 duplicates. As a result we did a further QC of my auction survey

23   data and reran the regression analysis. These results showed that panel damage was

24   1.59% per area of damage ("hit") and frame damage was 4.56%.

25   3. When my original April 28, 2003 report was prepared, Farmers was asked to provide

26   2000 randomly selected files to be used to model the Class and determine any over

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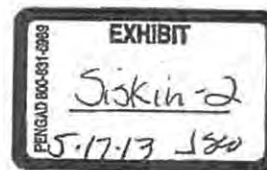
1 inclusion on the list of 53,180 presumptive class members provide by Farmers. Given the

2 very large numbers of files that Farmers was able to provide, we were able to randomly

3 divide this by only reviewing the even numbered files (see BLDS file numbers). Of the

4 even numbers we received some information on 900 files.

5 4. However, many of these files were incomplete in that they were missing estimates or

6 other relevant materials. We excluding those files (and conservatively assumed that the

7 claim was not a Class claim) where it was either clear from the file that the person was

8 not a class member (for example the file showed the vehicle was leased or rented, the

9 damage appeared to be under $1000, or the vehicle was not a class vehicle, or did not

10 have damage within the class) or it was possible the person was not a class member

11 because information was missing (for example there was no estimate and the claim was

12 for comprehensive). Given the available data we estimated conservatively that 80% of

13 the sample were Class members.

14 5. Of those determined to be Class members, a spreadsheet was prepared with 709 Class

15 members on it where there was sufficient data to be considered in modeling the Class. Of

16 those who were to be modeled data was obtained (without contacting the Class member

17 or third parties, based upon available data from Farmers alone) on the number of hits and

18 presence of frame damage on 657. An average loss-in-value analysis was computed for

19 these vehicles.

20 6. In late March 2013 I received a spreadsheet produced by Farmers entitled Farmers1294.

21 It contained information prepared by employees of Farmers from their review of the

22 contents of 953 claims files they were provided. As I understand the process followed by

23 Farmers, a fresh pull of materials was made by Farmers (eleven or so years after the

24 materials we were provided in 2002 were pulled) and to them were added materials

25 represented to be what had been copied during our 2002-2003 file review. I have not

26 been provided the materials underlying Farmers analysis, nor to my knowledge were they

27

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1   made available to Plaintiffs' Counsel when those doing the review were deposed.

2

3   7. It is notable that Farmers, eleven or so years later, was able to find more information than
      it had produced in response to discovery requests in 2002. The Farmers spreadsheet

4   (Farmers1294) did not contain the original file numbers we had used, making matching

5   the spreadsheet with our spreadsheet difficult. In discussions with my staff it was decided

6   that we would do computer and then hand efforts to match the data in Farmers1294 to our

7   data. Through searches and hand matching we were able to find matches on 689 of the

8   709 vehicles in our original data.

9

10   8. Because Farmers had further information, including, but not limited to, information on
      more extensive damage, and it appears in many cases estimates, which were not available

11   to us in 2002-3, we made changes and addition to our data on the 689. Since it appeared

12   that Farmers internal data was more complete (including supplemental information and

13   estimates we did not have) in most cases where there was a disagreement we relied upon

14   the new Farmers' data. Having done so we determined that 669 of the 689 are Class

15   members. The remainder appear from the available data (which I am assuming is

16   accurately represented by Farmers) to be excluded from the Class.

17

18   9. For vehicles where Farmers' new data indicated the areas of damage, and we had no
      information in the 2002-3 data, we estimated the number of hits using the information on

19   parts repair/replacement, which appears in a number of places in Farmers' spreadsheet.

20   This approach appears to be conservative, in that it may underestimate the extensiveness

21   of damage on some claims. For example, on a number of claims Farmer list only

22   repairs/replacement of the hood in a frontal collision where it would appear that there

23   probably also would be front end damage.

24

25   10. The damage numbers were then rerun on those vehicles for which blue books were
      available, using Farmers conclusions that frame damage existed, based upon their further

26

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information, in place of those in the initial 2003 spreadsheet when they conflicted. Given the testimony of Farmer's 30(b)(6) designee David Koehler that Farmers settles claims at retail values (something that conforms to my own experience) damages were run using the retail good blue book values. This is a conservative estimate of damages as some vehicles will be excellent. Condition of vehicles can be incorporated into a claim form in a distribution phase, but data to determine this on every vehicle was not readily available in Farmers' data, and as such the average was used.

11. The run shows average loss in value of $1386.87 per car for the sample of the Class. In conjunction with Counsel, information in Farmers spreadsheet was then used to determine the likely Class membership of those listed on Farmers1294 who were not listed in our original spreadsheet. This shows, according to Farmers, that 154 were not Class member, 101 were Class members, and for 9 the data provided by Farmers in the spreadsheet does not conclusively answer the question. In determining exclusion from the Class we have treated vehicles as having been non-owned when Farmers spreadsheet appears to indicate that Farmers own records (which should contain the information for reasons explained in the recent Farmers deposition) show this, but we did not rely upon this when the information came from a third party source for which I have no evidence of reliability. Applying these criteria, of the claims not on our original list, we have excluded five based upon the assertion in Farmers' spreadsheet that data showed them to be non-owned, which not excluding the six that the only suggestion they were not owned appears to have come from CARFAX, rather than Farmers' own records.

12. We therefore know that of the 942 entries for which Class membership can be determined, 770 were Class members. This represents 81.74098% of those reflected on the Class list generated by Farmers based upon its computer system. As such the Class size is 43,469 claims.

13. Multiplying the Class size by the average per claim loss in value yields Class wide

1 damages of $60,285,945.

2

3 14. As discussed in my earlier disclosures, we then have calculated the percentage of the

4 Class damage that we estimate would represent overlap with prior damage (and as such

5 not further loss in value). Using Farmers claims data, combined with the number of

6 policies in force, we estimate that a deduction of 2.015% is necessary for the possibility

7 of overlap in the same spot. It should be noted that this level of overlap, and resulting

8 discount is very conservative. This is particularly so when compared to Farmers' efforts

9 to determine this on the spreadsheet using third party data the accuracy of which can not

10 be determined and therefore upon which I would not reply. This only shows 11 prior

11 accidents (which is not the same thing as overlapping accidents) which were alleged to

12 have occurred in the sample of 953 (a 1.15% chance of *any* prior accident) while our

13 calculations show a 2.25% change of another accident in any given *year*, not the whole

14 life of the car.   Applying this discount for prior overlapping damage, the total Class wide

damages, are $59,137,261.

15 15. I have also completed part of the calculation of the individual damages for the vehicle

16 individuals who have been approved as Class representatives: Mr. Janhunen, Mr.

17 Hampton, and Ms. Coopers' vehicles. I have been given copies of the repair estimates

18 along with an assessment of the existence of frame/structure damage and the number of

19 spots for each. I understand that none had prior overlapping accidents.

20 16. Mr. Janhunen's vehicle sustained frame/structural damage and damage to ten (10) areas:

21 front end, Hood, L and R Fender, L and R doors, roof, R and L quarter panels, and trunk.

22 As such his vehicle suffered a 20.6% loss in value.

23

24 17. Mr. Hampton's vehicle sustained frame/structural damage and damage to four (4) areas:

25 front end, fender, door, rear corner panel, without including the hood which was blended.

26 As such his vehicle suffered a 11.36% loss in value.

27

28

5

1

2   18. Ms. Cooper's vehicle sustained frame/structure damage and damage to three (3) areas:

3   front end, hood, and left fender. As such her vehicle suffered a 9.4% loss in value.

4   19. These deductions can be applied to pre-loss valuations of the vehicles.

5

6   *Bernard R. Siskin*

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8   _____

      Bernard Siskin, Ph.D.

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      Date: May 16, 2013

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Exhibit "C"

IN THE SUPERIOR COURT FOR THE STATE OF WASHINGTON
IN AND FOR PIERCE COUNTY

BRAD MANSKER, individually and for all others similarly situated, Plaintiff, v. FARMERS INSURANCE COMPANY OF WASHINGTON, Defendant.	No. 11-2-06668-7 DECLARATION OF BERNARD A. SISKIN, Ph.d. The Honorable Susan K. Serko

I, Bernard A. Siskin, Ph.d., hereby state under penalty of perjury, and if called for could so state and testify to, the following facts and professional opinions, based upon my personal knowledge, professional expertise, and work in this and prior matters.

1. I have been retained by Plaintiff in this matter to offer opinions on the ability to determine class wide, and via the use of a formula derived from my work, individual damage estimates for members of the proposed Class.

2. This declaration and my opinions in this Case, build upon, and incorporate the work done and the opinions expressed in *Moeller/Janhunen v. Famers Ins. Co. of Washington*, No. 99-2-07850-6 ("*Moeller*") which involved the same claim for diminished value and the same defendant.

DECLARATION OF BERNARD A. SISKIN, Ph.d. - 1

3. As discussed in my Supplemental Disclosure dated May 16, 2013 in *Moeller*, my deposition taken on May 17, 2013 in the same case, and in the supplemental materials provided in that case, it was possible in *Moeller* to determine Class wide damages based upon a sample taken of the Class. Then individual damages could be determined (for the Class Representative(s) or any Class member in a claims process) through applying the results of my regression analysis of diminished value to the repair estimates of individual class members using the same method used on the sample of class members' claims reviewed in *Moeller*.

4. Moeller involved the application of data obtained from a survey taken of vehicle sales at auctions in the period from 2001 to 2002. Vehicles were inspected by individuals trained in, and then following, an inspection protocol. These individuals inspected vehicles, noting any areas where the vehicle was damaged but had been properly repaired. They did so as the fact of repairs were notable (i.e. there were signs of repair) in an inspection.

5. Because the presence of repair on the vehicles was determined by inspection, the model measured not intangible, invisible or hypothetical differences in vehicles (what Farmers has called "stigma") but instead what I understand from subject matter experts and Farmers' own employees and experts, to be the very real and *detectable* difference in vehicles that experienced an accident and subsequent repairs to the vehicles' body, paint and/or frame.[1]

6. As I have noted in prior depositions, to the extent that any vehicle hypothetically had repair falling within the Class definition in *Moeller* or this Case (body, paint, and/or frame damage and over $1000 in total damage) that was "intangible," and therefore undetectable, those vehicles would have been coded as undamaged vehicles, and to the extent (again hypothetically) that buyers knew the vehicles had been damaged but they had been repaired so

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[1] I understand the difference to have been summarized by the Supreme Court of Washington as follows: "In contrast, 'stigma damages' occur when the vehicle has been fully restored to its preloss condition, but it carries an intangible taint due to its having been involved in an accident." None of the vehicles in my auction survey identified as having been damaged had only "an intangible taint;" rather, they had identifiable areas of prior accident damage that had been properly (according to two inspectors with experience in auto body repair) but self-evidently not invisibly repaired.

DECLARATION OF BERNARD A. SISKIN, Ph.d. - 2

that they had no tangible differences, they would have been coded as unrepaired vehicles. As such any "stigma" in the model, if any hypothetically existed, would simply have acted to bias the results lower, benefiting Farmers with a lower estimate of damages.

7.   I understand from Counsel that this case involves vehicles damaged between March 2004 and the present and that it involves Uninsured and Undersinsured Motorist (UIM) claims. There are therefore two questions that should be answered in applying the regression model based upon data from auto auctions to the claims at issue in this case.

8.   The first question that will need to be answered is how the population within the Class varies from that in *Moeller*. I assume that in modeling the Class wide damages that the average damages will be higher, as the vehicles will be on average more recent, and used car values have risen over time. In addition, I assume that the percentage of those on the Class lists who are Class members will be higher. This is because there should be fewer claims that do not fall within the Class amongst claims on the Class list in this case, which I anticipate will be similar to the collision claims in *Moeller*, while not including as many of the comprehensive coverage type claims which were sometimes found not to be within the *Moeller* Class.

9.   However, as in *Moeller*, where both Plaintiffs and Farmers reviewed a sample, this question will be empirically determined by taking a sample of the Class. A sample will be requested from the Class list and the actual claims file inspected. The results of this sample will show the character of the Class, and as in *Moeller* will allow the total Class wide damages to be determined and then the same methodology utilized to determine individual damages if necessary. It is therefore possible to determine Class wide and individual damages using the same method utilized in *Moeller*. I am in the process of working with Counsel to obtain that sample, and then will review it to model the Class for presentation at trial.

DECLARATION OF BERNARD A. SISKIN, Ph.d. - 3

10. The second question is if the auction market which we observed in 2001-2002 has changed in a fundamental way. This has two components. Has the ability to detect repaired auto damage in the manner we used in 2001-2002 (visual inspections and the use of "MIL gauges") fundamentally changed?   Has customer knowledge about prior accidents and unwillingness to pay the same for wrecked and repaired vehicles changed in any fundamental way?   These questions can be answered either empirically (by gathering a smaller set of data at an auto action and determining if the model's estimates of damages need to be increased or decreased slightly) or by reviewing market conditions as shown by the testimonial record.

11. In *Moeller* multiple employees and witnesses from Farmers were deposed under oath. These depositions (and the answers given in them) make clear to me, that absent other compelling statistical evidence, to a reasonable degree of scientific probability the vehicle market remains similar as it relates to diminished value. As such the prior estimates of loss as they relate to extensiveness of areas of accident damage detailed in my reports and depositions can reasonably be applied to this case.

12. Farmers experts and witnesses Deane Fehrman, DeAnna L. Peppers, Robert Pearsall, Dave Koehler, and John T. Ellis all admitted that vehicle repairs were detectable and were not invisible to an observer. As Mr. Ellis for example answered:

> Q: Okay. Well, certainly, if you took in your car to trade it in or sell it to a dealer, the dealer can use a mil gauge and in about ten seconds figure out if the car has had paint work done on it; right?
> A   Yes. Mm-hm.
> Q   And certainly, if we look in the secondary market, people trading or selling cars in the auto industry, in the auto sales industry, they can tell by using a mil gauge or looking at the car if it's been in an accident; right?
> A   Yes.
> Q   Okay. And so in that case, they can tell the differences. The paint work will be an indicator that it's been repaired; right?
>
> A   That's correct.

3/21/13 Deposition of John T. Ellis at 28:3-17. Based upon these admissions, and absent further information, it is my opinion to a degree of reasonable statistical certainty that the prior auction model can be applied to this case through the use of a new Class sample.[2]

13. The market question can also be answered empirically through gathering a set of data at a current auto auction to determine if any slight changes in the estimates in the model should be considered. I am currently working with Counsel to obtain access to an auto auction so as to gather a small set of data using the same methodology as was used in 2001-2002. This data (if we can obtain access to the auto auction) can then be used as a cross check on the model. While not necessary to do for the model to be valid, a cross check will allow me to once again validate (and if necessary slightly adjust) my estimates.

_____   12/2/2013_____
Bernard A. Siskin, Ph.D.   Date

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[2] I note that the publically available information on prior accidents (e.g. CARFAX) is if anything more ubiquitous today than it was in the 2001-2002 period. As such one would expect diminished value to increase, not decrease, from the prior estimates.

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DECLARATION OF BERNARD A. SISKIN, Ph.d. - 5

Exhibit "D"

IN THE SUPERIOR COURT FOR THE STATE OF WASHINGTON
IN AND FOR PIERCE COUNTY

BRAD MANSKER, individually and for all others similarly situated,	No. 11-2-06668-7
Plaintiff,	
v.	REPLY DECLARATION OF BERNARD R. SISKIN, Ph.D.
FARMERS INSURANCE COMPANY OF WASHINGTON,	The Honorable Susan K. Serko
Defendant.	

I, Bernard R. Siskin, Ph.D., hereby state under penalty of perjury, and if called for could

so state and testify to, the following facts and professional opinions, based upon my personal

knowledge, professional expertise, and work in this and prior matters.

1. Since the filing of my original December 2, 2013 declaration in this matter on, I

have been provided, and have reviewed the Expert Report of Robert C. Marshall, Ph.D.   This

declaration replies to the assertions and claims made in this report, and responds to certain

assertions made during my deposition.

2. As noted in my prior declarations in *Moeller/Janhunen v. Famers Ins. Co. of*

Washington, No. 99-2-07850-6 ("*Moeller*"), a case which involved the same claim for

diminished value and the same defendant, and in my declaration in this case, I was retained as

DECLARATION OF BERNARD R. SISKIN, Ph.D. - 1

an expert to determine Class wide damages and a method whereby those damages could be individually distributed using the same method. While I am not a lawyer, I have reviewed the opinion of the Washington Supreme Court in *Moeller v. Farmers Insurance Company of Washington*, 173Wn.2d 264, 267 P.3d 998 (2011). I understand that the Court held that: "Farmers' policy provides coverage for diminished value after a car is repaired." In *Moeller*, in this case, and in other diminished value cases, my task has been to statistically quantify the "diminished value" after a vehicle is repaired, *as determined by fair market values.*

3. It is my understanding that the Moeller Court further defined what was "diminished value" and, as importantly, what was not, noting that:

> "A vehicle suffers 'diminished value' when it sustains physical damage in an accident, but due to the nature of the damage, it cannot be fully restored to its preloss condition. Weakened metal that cannot be repaired is one such example. In contrast, "stigma damages" occur when the vehicle is fully restored to its preloss condition, but it carries an intangible taint due to its having been involved in an accident."

4. I have been repeatedly asked by Farmer's counsel if the damages that are quantified in my auction study were from "diminished value" or "stigma." As I noted in my earlier declaration in this case, and in my deposition testimony, none of the vehicles in my auction survey identified as having been damaged through an inspection had only "an intangible taint;" rather, they all by definition *had identifiable areas of prior accident damage that had been properly (according to two inspectors with experience in auto body repair) but self-evidently not invisibly repaired.* The changes to the vehicle's physical condition that remained after repair were therefore *visible*, and the vehicle was not in its "pre-loss condition" as I would understand the term used by the Washington Supreme Court. As such, none of the vehicles identified as having been in accidents (and therefore tested to see if they had "diminished value") in my sample were "stigma" vehicles.[1]

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[1] Hypothetically, a study design that would have captured "stigma" *along with* "diminished value" – as those terms were used by the Washington Supreme Court – could be designed. For example, if one were to follow the value of cars with disclosed accidents on CarFax and compare them to those with no reported accidents (putting aside other issues such a study might present), I assume that there would be some vehicles in the "CarFax" group that had

5. As I explained in my deposition, were such a <u>hypothetical</u> "stigma" vehicle with only an "intangible taint" (one whose repairs placed it in its pre-loss condition) inspected in the study, it would not have been identified as a vehicle with prior damage in our auction survey. As such, it would have been classified as undamaged, and not impacted the estimates produced by the model. Moreover, if again hypothetically, the bidders on the vehicle had believed the vehicle to have been damaged and repaired – but where the areas of repair were not identifiable as they were in pre-loss condition – and paid less as a result, it would simply have pushed down slightly the sale price for undamaged vehicles, resulting in a smaller estimate of market loss for vehicles with "diminished value", and a more conservative class wide damage estimate. Put another way, none of the estimated loss in the model is "stigma" and if any "stigma" vehicles actually existed in the model, they would be classified as undamaged, resulting in lower diminished value estimates benefiting Farmers.

6. In my deposition in this case, Counsel for Farmers made reference to an opinion in Federal Court in this Case. I have now reviewed that opinion, which was issued before the *Moeller* decision from the Washington Supreme Court, and it appears to hold that "To the extent the parties dispute the appropriate measure of damages for property damage, as covered by the policy, the court declines to resolve the issue here." *Mansker v. Farmers Ins. Co. of Wa.*, no 2:10 cv-00511-JLR (W.D. Wa 9/14/10) at 21. However, the Court further added that "payment of fair market value on a total loss constitutes payment for damages for property damage." My auction study measures the reduction in fair market value as a result of the tangible and detectible changes and differences in the vehicle after repair, i.e. the failure to put the vehicle back into its "pre-loss condition" as the Washington Supreme Court has used that term.

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only mechanical, glass, tire, metal bumper, and interior theft (radio, etc) damage repaired, but no body, paint or frame/structural damage. Therefore such a hypothetical study would include, as I understand from subject matter experts, and as Farmers' own employees have testified, some vehicles whose repairs could not be detected and would not cause "diminished value." However, this is not the study that I oversaw.

DECLARATION OF BERNARD R. SISKIN, Ph.D. - 3

7. Dr. Marshall claims that I "ma[de] no attempt to measure the loss in value that is due to irreparable damage." As I understand those terms, and as I understand the testimony of Farmers' own witnesses and experts, this statement is not correct. My auction study measures precisely the loss in value, as measured by market clearing prices, due to detectible (and therefore irreparable) differences in a vehicle as it relates to paint and body work or frame/structural damage after repair.

8. What Dr. Marshall has for some reason attempted to do in his report is incorrectly conflate what would appear to me to be a subset of "irreparable physical" damage; vehicles with frame damage and further damage of a type called "secondary damage" (a term I had not heard before it was used in my deposition, but a concept of which I am well aware[2]), with the broader set of tangible differences in post-repair vehicles that we identified, and for which we inspected. See Dr. Marshall's paragraphs 49-50. As my statistical analysis shows, these differences are grouped into "paint and body damage" and "frame damage"; the presence of either causes a reduction in the vehicle's value.

9. As noted in my prior declarations and depositions involving Farmers, Farmers'own employees have admitted, and subject matter experts who I have consulted have stated, that vehicles are tangibly different after body, paint, and frame damage, and they can be identified as such. My study identified vehicles of this type, compared them to what an inspection showed to be undamaged vehicles, and found a loss in market value.

10. Dr. Marshall concludes that my analysis does not isolate the impact of secondary damage on vehicle value (and he is correct) but, neither does the market, and his arguement fundamentally ignores what we found.   Dr. Marshall hypothesizes that the market value is somehow moved by the presence or absence of secondary damage and he argues that

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[2] As I testified in my deposition, while not an expert in the area, I am certainly knowledgeable enough about the laws of physics to know that when a vehicle is hit, the energy of the impact travels through the vehicle, doing damage to and loosening parts away from the point of impact.

DECLARATION OF BERNARD R. SISKIN, Ph.D. - 4

my study should somehow have measured the unmeasurable rather than the effect of a vehicle having *identifiable areas of prior accident damage.* Yet, as I understand it, the vehicle has to be torn down to find such damage, something that is simply not possible at auctions. As such, while secondary damage may (and in my personal experience likely does) exist on certain vehicles at auction, its presence or absence is not what changes the market sales prices. What reduced the sale price was the extensiveness of prior paint/body damage and, when present, frame/structural damage.

11. The real world fallacy in Dr. Marshall's argument is shown by his hypothetical about engine wear in his paragraph 33. Dr. Marshall is correct that two vehicles, with identical mileage and identical other factors will likely sell for the same price, despite one having been driven harder and one less hard. This is because (unlike with Diminished Value), there is no tangible or identifiable difference by which a buyer may identify degree of engine wear (buyers do not break down the engine before buying a vehicle), and therefore, it does not impact the price. However, market value *does reflect* vehicle mileage, because mileage is an indicator of a number of actual and identifiable differences in the vehicle, one of which is likely engine wear. It is obvious that if two vehicles are otherwise the same (e.g., with respect to make, model, year, condition, options, etc), yet one has 20,000 miles on it and another has 50,000 miles on it, the vehicle with only 20,000 miles will be worth more. Yet, the market does not break down the fine distinctions between vehicles, figuring the value of each possible fault that comes with more mileage. Nor do buyers spend time disassembling vehicles. Rather the market reacts to the very real difference in mileage which is easily identifiable by looking at the vehicle's odometer. My study shows that buyers react to (and pay less as a result of) the identifyable and tangible extensiveness of body/paint repair and the presence of frame/structural damage.

12. Dr. Marshall spends many pages explaining the different theoretical reasons why a vehicle that is identified as having been in an accident loses some of its retail value,

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even if it has been properly repaired. He then reverses his argument to claim that my model, which empirically confirms his general opinions, is wrong. He submits that removing three "outlier" observations will lead to the conclusion that a vehicle that was properly repaired subsequent to an accident will not, on average, lose some of its retail value. That is, Dr. Marshall argues that removing three "outlier" observations from the analysis will eliminate the effect of frame damage on the price of a vehicle[3]. However, Dr. Marshall's argument is simply wrong. Dr. Marshall is an economist and not a statistician, and he does not understand the concept of regression outliers[4].

13. A regression outlier is an observation which is not well predicted by the regression, not merely an observation that leads to a conclusion you dislike. First, if one wants to identify outliers in this matter, one must look at all vehicles, not just those with frame damage, since outliers obviously can occur among vehicles with and without frame damage. Then, one must compare the actual value of the vehicle to the regression's prediction of its value to assess whether (i) the regression model is predicting the value reasonably, or (ii) the value is an outlier (i.e., the vehicle's value is not reasonably explained by the model). A regression outlier is normally identified as an observation whose value is at least two units of standard deviation from the value predicted by the regression.[5] If one were to identify the true regression outliers and simply remove them from the analysis and refit my model, the effect would be essentially the same, while the statistical significance would increase.

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[3] See section IV.E of Marshall report.

[4] Blatna, Dagmar, Outliers in Regression, http://statistika.vse.cz/konference/amse/PDF/Blatna.pdf.

[5] The two and half percent of the data that lies farthest above the mean and the two and half percent of the data that lies farthest below the mean (for a total 5%) would be expected to be outliers.

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<div align="right">**Table 1**</div>

Impact of Removing All Regression Outliers*

	Observations	Frame Damage Effect	Significance Level**
Original	748	4.56%	2.25
Less Outliers	699	4.51%	2.88

* = Defined as failing to fit the model and identified by the actual sales price being more than two units of standard deviation from the price predicted based on model.

** = Measured in units of standard deviation of standard normal variable.

14. As noted *supra*, Dr. Marshall focuses on only frame damaged vehicles in picking his "outliers". As also noted above, this is statistically incorrect when assessing the impact of removing real outliers. However, even ignoring this error *arguendo*, if Dr. Marshall had properly identified the outliers among only frame damaged vehicles, considering only Blue Book value, Dr. Marshall would have identified four such outliers. If he had removed these four outliers and refit my model, the estimated frame damage effect would remain statistically the same.

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Table 2

Impact of Removing All Statistical Outliers Identified Based on Examining Only Frame Damaged Vehicles and Using only Blue Book Value to Predict Sales Price

	Observations	Frame Damage Coefficient	Significance Level**
Original	748	4.56%	2.25
Less Outliers	744	4.42%	2.16

* = Defined within the sample of frame damaged vehicles as those vehicles whose sales price is not predicted reasonably by their Blue Book value and identified by the actual price being more than two units of standard deviation from the price predicted based on the Blue

** = Measured in units of standard deviation of standard normal variable.

15. Dr. Marshall identifies as "outliers" three frame damaged vehicles from among the frame damaged vehicles which have atypically low prices and low Blue Book values. He ignores the fact that vehicles without frame damage can also have low Blue Book values and low prices. If he wanted to test the sensitivity of my model to the inclusion of vehicles with atypically low Blue Book values, he should have removed from the analysis all vehicles with atypically low Blue Book values (i.e., vehicles whose Blue Book value is more than two units of standard deviation below the mean Blue Book value). If he had removed all such vehicles from the analysis population and refit the model, he would have found that the estimate of the effect of frame damage on price would have been essentially the same.[6]

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[6] It should be noted that while frame damage drops slightly, the effect of panel damages increases slightly from 1.60% to 1.72% .

DECLARATION OF BERNARD R. SISKIN, Ph.D. - 8

<div align="right">**Table 3**</div>

Based on Removing Vehicles Whose Blue Book Values Are Outliers With Respect to Blue Book Value*

	Observations	Frame Damage Coefficient	Significance Level**
Original	748	4.56%	2.25
Less Outliers	720	4.20%	2.13

* = Defined as having an atypically low Blue Book value(and price) and identified by the blue book value being more than two standard deviations below the mean Blue Book value of study population.

** = Measured in units of standard deviation of standard normal variable.

16. Rather than statistically identifying actual outliers, Dr. Marshall's rebuttal analysis actually simply identifies three frame damaged observations with a low sale price and removes them from the analysis population. This makes no sense. I could easily do the converse by identifying observations without frame damage but with a low sales price, or frame damaged vehicles with low Blue Book values but with relatively high prices and remove them from my analysis population. To demonstrate this, I identified three additional "outliers" of the type discussed above and removed two and three of them along with Dr. Marshall's three outliers, and reran the analysis. The results indicate that the estimated effect of frame damage on a vehicle was essentially the same after "outlier" removal (the effect was the same if two outliers were removed and slightly higher if three outliers were removed).

DECLARATION OF BERNARD R. SISKIN, Ph.D. - 9

Table 4

Impact of Removing Dr. Marshall's Three "Outliers" and Dr. Siskin's Two or Three "Outliers"

	Observations	Frame Damage Coefficient	Significance Level*
Original	748	4.56%	2.25
Less Marshall's Outliers and			
2 Siskin's Outliers	743	4.56%	2.22
3 Siskin's Outliers	742	4.95%	2.42

* = Measured in units of standard deviation of standard normal variable.

17. These results show clearly, and contrary to Dr. Marshall's allegation, that the model is stable and there is no statistical evidence that it overstates the impact of an accident on the value of a vehicle even when the repair is done properly.

18. In addition, Dr. Marshall argues that my estimate overstates the frame damage effect due to omitted variable bias.[7] This argument is highly speculative and is backed by no emperical or statistical evidence. He offers two possible situations where omitted variable bias might occur and hypothosizes that inclusion of these omitted variables would reduce the frame damage effect. The two situations are (i) that smokers are more likely than non-smokers to have accidents and, therefore, vehicles that have been in accidents and properly repaired are disproportionately more likely to have been owned by smokers and, moreover, when such vehicles are offered for sale, they retain a smoke odor which diminishes their value, and (ii) that vehicles that have been in accidents and been properly repaired would be more likely to be sold under a red light. With respect to the latter situation, to opine that vehicles that have been in an accident and were repaired properly would be more likely to be sold under a red light is entirely speculative. Why would a vehicle that was repaired properly be more

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[7] See paragraphs 62 through 64 of Dr. Marshall's report.

DECLARATION OF BERNARD R. SISKIN, Ph.D. - 10

likely to be sold under a red light unless vehicles that have been in an accident and been properly repaired are more likely to have serious problems compared to vehicles that were not in an accident? In that case, being under a red light more frequently is simply reflecting the fact that vehicles that have been in accidents and properly repaired are still more likely than non-accident vehicles to have serious problems because they were in an accident (otherwise, why would one expect them to be more likely to have serious problems?).

19. With respect to the first situation, Dr. Marshall's suggestion that smokers are disproportionately more likely to have accidents and, thus, vehicles that have been in accidents and been properly repaired are disproportionately more likely to have been owned by smokers and to retain an odor which diminishes their value is highly speculative. First, there are literally thousands of products and vehicle detailers who claim that smoke odor can be removed from vehicles. Moreover, while a few companies do offer a discount for non-smokers (notably Farmers does not), such discounts tend to be symbolic and immaterial.[8] If insurers such as Farmers considered vehicles of smokers to be significantly more vulnerable to accident than vehicles of non-smokers, economic theory would suggest that they would charge smokers more (or offer discounts to non-smokers), as they do for health insurance and life insurance. If insurance companies judge smoking to have an immaterial effect on the likelihood of being in an accident, then the vehicles of smokers are unlikely to be materially more likely to have been in an accident and properly repaired, and vehicles with residual smoke odor are unlikely to be disproportionately represented in the population of such vehicles.[9]

20. In fact, the most obvious situation (which Dr. Marshall notably fails to speculate about) that would impact the damage estimate is one which would be expected to bias the price of a

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[8] See http://www.insurancenavy.com/blog/how_does_smoking_affect_insurance_rates_premiums

[9] Moreover, it is reasonable to expect that if smoke odor is known to have any effect on the value of a vehicle, any residual odor would likely be removed during the course of repairing the vehicle or preparing it for sale, in order to increase its value.

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damaged vehicle downward (i.e., result in our underestimating the effect of damage on price). That is, the most obvious biasing situation would be one where we classify a vehicle as having damage when it does not have damage or when we classify a vehicle as not having damage when it does. The result of such misclassification would be to underestimate the true effect of damage on the vehicle's price. This follows logically, because a vehicle that has not been damaged is higher in value and including it in the group of damaged vehicles would increase the estimated expected price of a "damaged vehicle" while including a damaged vehicle in the group of undamaged vehicles would lower the estimated expected price of undamaged vehicles. To illustrate the possible impact of miscoding on our frame damage estimate, consider the following. Dr. Rubenfeld identified 21 vehicles he claims we miscoded as having no frame damage when, in fact, he says the inspectors' reports indicated frame damage. Assuming that Dr. Rubenfeld is correct, I reran my model treating those vehicles as frame damaged. The estimate of frame damage rose from 4.56% to 5.57%.

21. Finally, Dr. Marshall argues that I do not use a random sample. He is wrong. The sample drawn for inspection was a proper random sample. Dr. Marshall's allegation actually reflects the fact that my properly drawn random sample was censored, since I had to exclude vehicles that were not sold because they did not meet the reserve price (and since I do not have a sales price and do not know the reserve price).

22. Dr. Marshall argues that, since damaged vehicles will have fewer bidders even if they were repaired properly, if the reserves for damaged vehicles were set at the same level as the reserves for identical undamaged vehicles, there should be fewer damaged vehicles meeting reserve. This is not the case. The reserve price of a vehicle that is identical to a second vehicle except that the first vehicle has been in an accident and properly repaired will, on average, be lower than the reserve price of the second, uninjured vehicle. This is to be expected, because sellers consider a vehicle that has been in an accident to have lost value because of that accident, even if it was properly repaired. Nevertheless, it does not necessarily create a bias in the estimate if bidding on a non-accident and accident vehicle is similarly distributed around the reserve. Consider the following simple example. We have two

DECLARATION OF BERNARD R. SISKIN, Ph.D. - 12

identical vehicles, except that one was in an accident and repaired properly while the other was never in an accident. The bid data and analysis results are presented in the table below. The data in Table 5 shows four vehicles that are identical except that two were in an accident and repaired properly and the other two were not damaged. The damaged vehicles' reserve prices are $500 below those of the non-damaged vehicles. The highest bids for each vehicle are presented. Examining all four of the highest bidders, we see that the average bid for the damaged vehicle is $500 less than for the non-damaged vehicle. Because only the prices of the sold vehicles are known in my study, my analysis contains only the bidders and there is no bias.

Table 5

Hypothetical Demonstrating That, if the Distribution Around Reserve is Independent of Damage, the Censorship of Data Due to Reserve Creates No Bias

Category of Vehicle	Reserve	Highest Bid	Highest Bid	No Censoring	Censored
Damaged	$ 10,000	$ 9,700		$ 9,700	-
Damaged	$ 10,000		$ 10,400	$ 10,400	$ 10,400
Average Price				$ 10,050	$ 10,400
Not Damaged	$ 10,500	$ 10,200		$ 10,200	-
Not Damaged	$ 10,500		$ 10,900	$ 10,900	$ 10,900
Average Price				$ 10,550	$ 10,900
Difference in Average Price				$ 500	$ 500

Bernard R. Siskin

Bernard R. Siskin, Ph.D.
Dated: February 7, 2014

DECLARATION OF BERNARD R. SISKIN, Ph.D. - 13

Exhibit "E"

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The Honorable John A. McCarthy

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR THE COUNTY OF PIERCE

JAY MERRILL, individually, and as the
representative of all persons similarly situated,

        Plaintiff,

   v.

PEMCO MUTUAL INSURANCE COMPANY
and PEMCO INSURANCE COMPANY,

        Defendants.

Case No. 13-2-13764-5

DECLARATION AND REPORT OF
DR. BERNARD R. SISKIN

15   I, Dr. Bernard R. Siskin, state under penalty of perjury as follows:

16   1.   I have been retained in this matter (1) to provide opinions on the feasibility of

17

18 preparing a model to demonstrate the presence of Class wide damages and injury due to

19 diminished value, (2) to measure the loss in retail value of the vehicles in the proposed Class

20 due to diminished value, and then (3) to determine how to apply the same method in a post

21 verdict distribution process. It is my professional opinion that all three tasks can be done.

22   2.   I have provided opinions, and been deposed, in a number of prior diminished

23 value cases. Most recently, I provided declarations on December 2, 2013 and February 7, 2014

24 in *Mansker v. Farmers Ins. Co. of WA*. True and correct copies of these declarations are

25 attached hereto as Exhibit A and Exhibit B, respectively.

26

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DECLARATION AND REPORT OF DR. BERNARD R.
SISKIN - 1

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3.   My opinions in this case are consistent with, and incorporate, those provided in Exhibits A and B, and my deposition in *Mansker*, with the exception of one paragraph.

4.   In paragraph 8 of my December 2, 2013 declaration, I discuss the potential difference in Class population in *Mansker*, which involved UIM Claims, and *Moeller* which had involved Comprehensive and Collision Claims. It continues to be true that the amount of loss on a per vehicle basis will likely be significantly greater than those in *Moeller*. This is because the pre-accident market values for vehicles within the Class in the time frame of this case (2007 to current) have likely substantially increased from those at issue in *Moeller* (1993 to 2002). However, the Class population in this proposed Class will involve some comprehensive claims (which on average tend to have lower diminished value on them) as contrasted with *Mansker*. However, since it appears that PEMCO can rule out a number of exclusions in generating the Class List (e.g. mileage for most cars, glass or tire only claims) the portion of those on the Class List who are actually members of the Class – as will be determined by a sample of the Claims files of those on the Class list - will be greater.

5.   Given the available data from PEMCO, modeling the Class will present no difficulties. A valid and accurate Class wide damage calculation as was done in *Moeller* can be prepared in this case, and then the formula used to determine those damages can be applied on a claim by claim based in a distribution phase if it is needed.

6.   As more fully discussed in Exhibits A and B and my deposition, the work done, and the challenges made by Farmers' two experts in *Moeller* and *Mansker* simply validated and served to peer review my auction data model, which can be accurately and appropriately applied to this case by using a sample of the claims of members of the proposed Class.

DECLARATION AND REPORT OF DR. BERNARD R.
SISKIN - 2

1   If called to, I could testify competently to the matters discussed herein and in Exhibits

2   A and B.

3   DATED this 7ᵗʰ day of March, 2014, at Philadelphia, Pennsylvania.

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6   Dr. Bernard R. Siskin

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DECLARATION AND REPORT OF DR. BERNARD R.
SISKIN - 3

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Exhibit "A"

IN THE SUPERIOR COURT FOR THE STATE OF WASHINGTON
IN AND FOR PIERCE COUNTY

BRAD MANSKER, individually and for all others similarly situated,	No. 11-2-06668-7
Plaintiff,	
v.	DECLARATION OF BERNARD A. SISKIN, Ph.d.
FARMERS INSURANCE COMPANY OF WASHINGTON,	The Honorable Susan K. Serko
Defendant.	

I, Bernard A. Siskin, Ph.d., hereby state under penalty of perjury, and if called for could so state and testify to, the following facts and professional opinions, based upon my personal knowledge, professional expertise, and work in this and prior matters.

1. I have been retained by Plaintiff in this matter to offer opinions on the ability to determine class wide, and via the use of a formula derived from my work, individual damage estimates for members of the proposed Class.

2. This declaration and my opinions in this Case, build upon, and incorporate the work done and the opinions expressed in *Moeller/Janhunen v. Famers Ins. Co. of Washington*, No. 99-2-07850-6 ("*Moeller*") which involved the same claim for diminished value and the same defendant.

DECLARATION OF BERNARD A. SISKIN, Ph.d. - 1

3. As discussed in my Supplemental Disclosure dated May 16, 2013 in *Moeller*, my deposition taken on May 17, 2013 in the same case, and in the supplemental materials provided in that case, it was possible in *Moeller* to determine Class wide damages based upon a sample taken of the Class. Then individual damages could be determined (for the Class Representative(s) or any Class member in a claims process) through applying the results of my regression analysis of diminished value to the repair estimates of individual class members using the same method used on the sample of class members' claims reviewed in *Moeller.*

4. Moeller involved the application of data obtained from a survey taken of vehicle sales at auctions in the period from 2001 to 2002. Vehicles were inspected by individuals trained in, and then following, an inspection protocol. These individuals inspected vehicles, noting any areas where the vehicle was damaged but had been properly repaired. They did so as the fact of repairs were notable (i.e. there were signs of repair) in an inspection.

5. Because the presence of repair on the vehicles was determined by inspection, the model measured not intangible, invisible or hypothetical differences in vehicles (what Farmers has called "stigma") but instead what I understand from subject matter experts and Farmers' own employees and experts, to be the very real and *detectable* difference in vehicles that experienced an accident and subsequent repairs to the vehicles' body, paint and/or frame.[1]

6. As I have noted in prior depositions, to the extent that any vehicle hypothetically had repair falling within the Class definition in *Moeller* or this Case (body, paint, and/or frame damage and over $1000 in total damage) that was "intangible," and therefore undetectable, those vehicles would have been coded as undamaged vehicles, and to the extent (again hypothetically) that buyers knew the vehicles had been damaged but they had been repaired so

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[1] I understand the difference to have been summarized by the Supreme Court of Washington as follows: "In contrast, 'stigma damages' occur when the vehicle has been fully restored to its preloss condition, but it carries an intangible taint due to its having been involved in an accident." None of the vehicles in my auction survey identified as having been damaged had only "an intangible taint;" rather, they had identifiable areas of prior accident damage that had been properly (according to two inspectors with experience in auto body repair) but self-evidently not invisibly repaired.

that they had no tangible differences, they would have been coded as unrepaired vehicles. As such any "stigma" in the model, if any hypothetically existed, would simply have acted to bias the results lower, benefiting Farmers with a lower estimate of damages.

7.   I understand from Counsel that this case involves vehicles damaged between March 2004 and the present and that it involves Uninsured and Undersinsured Motorist (UIM) claims.   There are therefore two questions that should be answered in applying the regression model based upon data from auto auctions to the claims at issue in this case.

8.   The first question that will need to be answered is how the population within the Class varies from that in *Moeller*.   I assume that in modeling the Class wide damages that the average damages will be higher, as the vehicles will be on average more recent, and used car values have risen over time.   In addition, I assume that the percentage of those on the Class lists who are Class members will be higher.   This is because there should be fewer claims that do not fall within the Class amongst claims on the Class list in this case, which I anticipate will be similar to the collision claims in *Moeller*, while not including as many of the comprehensive coverage type claims which were sometimes found not to be within the *Moeller* Class.

9.   However, as in *Moeller*, where both Plaintiffs and Farmers reviewed a sample, this question will be empirically determined by taking a sample of the Class.   A sample will be requested from the Class list and the actual claims file inspected.   The results of this sample will show the character of the Class, and as in *Moeller* will allow the total Class wide damages to be determined and then the same methodology utilized to determine individual damages if necessary.   It is therefore possible to determine Class wide and individual damages using the same method utilized in *Moeller*.   I am in the process of working with Counsel to obtain that sample, and then will review it to model the Class for presentation at trial.

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10. The second question is if the auction market which we observed in 2001-2002 has changed in a fundamental way. This has two components. Has the ability to detect repaired auto damage in the manner we used in 2001-2002 (visual inspections and the use of "MIL gauges") fundamentally changed?   Has customer knowledge about prior accidents and unwillingness to pay the same for wrecked and repaired vehicles changed in any fundamental way?   These questions can be answered either empirically (by gathering a smaller set of data at an auto action and determining if the model's estimates of damages need to be increased or decreased slightly) or by reviewing market conditions as shown by the testimonial record.

11. In *Moeller* multiple employees and witnesses from Farmers were deposed under oath. These depositions (and the answers given in them) make clear to me, that absent other compelling statistical evidence, to a reasonable degree of scientific probability the vehicle market remains similar as it relates to diminished value. As such the prior estimates of loss as they relate to extensiveness of areas of accident damage detailed in my reports and depositions can reasonably be applied to this case.

12. Farmers experts and witnesses Deane Fehrman, DeAnna L. Peppers, Robert Pearsall, Dave Koehler, and John T. Ellis all admitted that vehicle repairs were detectable and were not invisible to an observer. As Mr. Ellis for example answered:

> Q: Okay. Well, certainly, if you took in your car to trade it in or sell it to a dealer, the dealer can use a mil gauge and in about ten seconds figure out if the car has had paint work done on it; right?
> A   Yes. Mm-hm.
> Q   And certainly, if we look in the secondary market, people trading or selling cars in the auto industry, in the auto sales industry, they can tell by using a mil gauge or looking at the car if it's been in an accident; right?
> A   Yes.
> Q   Okay. And so in that case, they can tell the differences. The paint work will be an indicator that it's been repaired; right?
>
> A   That's correct.

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3/21/13 Deposition of John T. Ellis at 28:3-17. Based upon these admissions, and absent further information, it is my opinion to a degree of reasonable statistical certainty that the prior auction model can be applied to this case through the use of a new Class sample.[2]

13. The market question can also be answered empirically through gathering a set of data at a current auto auction to determine if any slight changes in the estimates in the model should be considered. I am currently working with Counsel to obtain access to an auto auction so as to gather a small set of data using the same methodology as was used in 2001-2002. This data (if we can obtain access to the auto auction) can then be used as a cross check on the model. While not necessary to do for the model to be valid, a cross check will allow me to once again validate (and if necessary slightly adjust) my estimates.

_____
Bernard A. Siskin, Ph.D.

12/2/2013
Date

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[2] I note that the publically available information on prior accidents (e.g. CARFAX) is if anything more ubiquitous today than it was in the 2001-2002 period. As such one would expect diminished value to increase, not decrease, from the prior estimates.

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Exhibit "B"

IN THE SUPERIOR COURT FOR THE STATE OF WASHINGTON
IN AND FOR PIERCE COUNTY

BRAD MANSKER, individually and for all others similarly situated, Plaintiff, v. FARMERS INSURANCE COMPANY OF WASHINGTON, Defendant.	No. 11-2-06668-7 REPLY DECLARATION OF BERNARD R. SISKIN, Ph.D. The Honorable Susan K. Serko

I, Bernard R. Siskin, Ph.D., hereby state under penalty of perjury, and if called for could so state and testify to, the following facts and professional opinions, based upon my personal knowledge, professional expertise, and work in this and prior matters.

1. Since the filing of my original December 2, 2013 declaration in this matter on, I have been provided, and have reviewed the Expert Report of Robert C. Marshall, Ph.D. This declaration replies to the assertions and claims made in this report, and responds to certain assertions made during my deposition.

2. As noted in my prior declarations in *Moeller/Janhunen v. Famers Ins. Co. of Washington*, No. 99-2-07850-6 ("*Moeller*"), a case which involved the same claim for diminished value and the same defendant, and in my declaration in this case, I was retained as

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an expert to determine Class wide damages and a method whereby those damages could be individually distributed using the same method. While I am not a lawyer, I have reviewed the opinion of the Washington Supreme Court in *Moeller v. Farmers Insurance Company of Washington*, 173Wn.2d 264, 267 P.3d 998 (2011). I understand that the Court held that: "Farmers' policy provides coverage for diminished value after a car is repaired." In *Moeller*, in this case, and in other diminished value cases, my task has been to statistically quantify the "diminished value" after a vehicle is repaired, *as determined by fair market values*.

3. It is my understanding that the Moeller Court further defined what was "diminished value" and, as importantly, what was not, noting that:

> "A vehicle suffers 'diminished value' when it sustains physical damage in an accident, but due to the nature of the damage, it cannot be fully restored to its preloss condition. Weakened metal that cannot be repaired is one such example. In contrast, "stigma damages" occur when the vehicle is fully restored to its preloss condition, but it carries an intangible taint due to its having been involved in an accident."

4. I have been repeatedly asked by Farmer's counsel if the damages that are quantified in my auction study were from "diminished value" or "stigma." As I noted in my earlier declaration in this case, and in my deposition testimony, none of the vehicles in my auction survey identified as having been damaged through an inspection had only "an intangible taint;" rather, they all by definition *had identifiable areas of prior accident damage that had been properly (according to two inspectors with experience in auto body repair) but self-evidently not invisibly repaired*. The changes to the vehicle's physical condition that remained after repair were therefore *visible*, and the vehicle was not in its "pre-loss condition" as I would understand the term used by the Washington Supreme Court. As such, none of the vehicles identified as having been in accidents (and therefore tested to see if they had "diminished value") in my sample were "stigma" vehicles.[1]

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[1] Hypothetically, a study design that would have captured "stigma" *along with* "diminished value" – as those terms were used by the Washington Supreme Court – could be designed. For example, if one were to follow the value of cars with disclosed accidents on CarFax and compare them to those with no reported accidents (putting aside other issues such a study might present), I assume that there would be some vehicles in the "CarFax" group that had

5. As I explained in my deposition, were such a <u>hypothetical</u> "stigma" vehicle with only an "intangible taint" (one whose repairs placed it in its pre-loss condition) inspected in the study, it would not have been identified as a vehicle with prior damage in our auction survey. As such, it would have been classified as undamaged, and not impacted the estimates produced by the model. Moreover, if again hypothetically, the bidders on the vehicle had believed the vehicle to have been damaged and repaired – but where the areas of repair were not identifiable as they were in pre-loss condition – and paid less as a result, it would simply have pushed down slightly the sale price for undamaged vehicles, resulting in a smaller estimate of market loss for vehicles with "diminished value", and a more conservative class wide damage estimate. Put another way, none of the estimated loss in the model is "stigma" and if any "stigma" vehicles actually existed in the model, they would be classified as undamaged, resulting in lower diminished value estimates benefiting Farmers.

6. In my deposition in this case, Counsel for Farmers made reference to an opinion in Federal Court in this Case. I have now reviewed that opinion, which was issued before the *Moeller* decision from the Washington Supreme Court, and it appears to hold that "To the extent the parties dispute the appropriate measure of damages for property damage, as covered by the policy, the court declines to resolve the issue here." *Mansker v. Farmers Ins. Co. of Wa.*, no 2:10 cv-00511-JLR (W.D. Wa 9/14/10) at 21. However, the Court further added that "payment of fair market value on a total loss constitutes payment for damages for property damage." My auction study measures the reduction in fair market value as a result of the tangible and detectible changes and differences in the vehicle after repair, i.e. the failure to put the vehicle back into its "pre-loss condition" as the Washington Supreme Court has used that term.

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only mechanical, glass, tire, metal bumper, and interior theft (radio, etc) damage repaired, but no body, paint or frame/structural damage. Therefore such a hypothetical study would include, as I understand from subject matter experts, and as Farmers' own employees have testified, some vehicles whose repairs could not be detected and would not cause "diminished value." However, this is not the study that I oversaw.

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7. Dr. Marshall claims that I "ma[de] no attempt to measure the loss in value that is due to irreparable damage." As I understand those terms, and as I understand the testimony of Farmers' own witnesses and experts, this statement is not correct. My auction study measures precisely the loss in value, as measured by market clearing prices, due to detectible (and therefore irreparable) differences in a vehicle as it relates to paint and body work or frame/structural damage after repair.

8. What Dr. Marshall has for some reason attempted to do in his report is incorrectly conflate what would appear to me to be a subset of "irreparable physical" damage: vehicles with frame damage and further damage of a type called "secondary damage" (a term I had not heard before it was used in my deposition, but a concept of which I am well aware[2]), with the broader set of tangible differences in post-repair vehicles that we identified, and for which we inspected. See Dr. Marshall's paragraphs 49-50. As my statistical analysis shows, these differences are grouped into "paint and body damage" and "frame damage": the presence of either causes a reduction in the vehicle's value.

9. As noted in my prior declarations and depositions involving Farmers, Farmers' own employees have admitted, and subject matter experts who I have consulted have stated, that vehicles are tangibly different after body, paint, and frame damage, and they can be identified as such. My study identified vehicles of this type, compared them to what an inspection showed to be undamaged vehicles, and found a loss in market value.

10. Dr. Marshall concludes that my analysis does not isolate the impact of secondary damage on vehicle value (and he is correct) but, neither does the market, and his arguement fundamentally ignores what we found. Dr. Marshall hypothesizes that the market value is somehow moved by the presence or absence of secondary damage and he argues that

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[2] As I testified in my deposition, while not an expert in the area, I am certainly knowledgeable enough about the laws of physics to know that when a vehicle is hit, the energy of the impact travels through the vehicle, doing damage to and loosening parts away from the point of impact.

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my study should somehow have measured the unmeasurable rather than the effect of a vehicle having *identifiable areas of prior accident damage*. Yet, as I understand it, the vehicle has to be torn down to find such damage, something that is simply not possible at auctions. As such, while secondary damage may (and in my personal experience likely does) exist on certain vehicles at auction, its presence or absence is not what changes the market sales prices. What reduced the sale price was the extensiveness of prior paint/body damage and, when present, frame/structural damage.

11. The real world fallacy in Dr. Marshall's argument is shown by his hypothetical about engine wear in his paragraph 33. Dr. Marshall is correct that two vehicles, with identical mileage and identical other factors will likely sell for the same price, despite one having been driven harder and one less hard. This is because (unlike with Diminished Value), there is no tangible or identifiable difference by which a buyer may identify degree of engine wear (buyers do not break down the engine before buying a vehicle), and therefore, it does not impact the price. However, market value *does reflect* vehicle mileage, because mileage is an indicator of a number of actual and identifiable differences in the vehicle, one of which is likely engine wear. It is obvious that if two vehicles are otherwise the same (e.g., with respect to make, model, year, condition, options, etc), yet one has 20,000 miles on it and another has 50,000 miles on it, the vehicle with only 20,000 miles will be worth more. Yet, the market does not break down the fine distinctions between vehicles, figuring the value of each possible fault that comes with more mileage. Nor do buyers spend time disassembling vehicles. Rather the market reacts to the very real difference in mileage which is easily identifiable by looking at the vehicle's odometer. My study shows that buyers react to (and pay less as a result of) the identifyable and tangible extensiveness of body/paint repair and the presence of frame/structural damage.

12. Dr. Marshall spends many pages explaining the different theoretical reasons why a vehicle that is identified as having been in an accident loses some of its retail value,

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even if it has been properly repaired. He then reverses his argument to claim that my model, which empirically confirms his general opinions, is wrong. He submits that removing three "outlier" observations will lead to the conclusion that a vehicle that was properly repaired subsequent to an accident will not, on average, lose some of its retail value. That is, Dr. Marshall argues that removing three "outlier" observations from the analysis will eliminate the effect of frame damage on the price of a vehicle[3]. However, Dr. Marshall's argument is simply wrong. Dr. Marshall is an economist and not a statistician, and he does not understand the concept of regression outliers[4].

13. A regression outlier is an observation which is not well predicted by the regression, not merely an observation that leads to a conclusion you dislike. First, if one wants to identify outliers in this matter, one must look at all vehicles, not just those with frame damage, since outliers obviously can occur among vehicles with and without frame damage. Then, one must compare the actual value of the vehicle to the regression's prediction of its value to assess whether (i) the regression model is predicting the value reasonably, or (ii) the value is an outlier (i.e., the vehicle's value is not reasonably explained by the model). A regression outlier is normally identified as an observation whose value is at least two units of standard deviation from the value predicted by the regression.[5] If one were to identify the true regression outliers and simply remove them from the analysis and refit my model, the effect would be essentially the same, while the statistical significance would increase.

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[3] See section IV.E of Marshall report.

[4] Blatna, Dagmar, Outliers in Regression, http://statistika.vse.cz/konference/amse/PDF/Blatna.pdf.

[5] The two and half percent of the data that lies farthest above the mean and the two and half percent of the data that lies farthest below the mean (for a total 5%) would be expected to be outliers.

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Table 1

Impact of Removing All Regression Outliers*

	Observations	Frame Damage Effect	Significance Level**
Original	748	4.56%	2.25
Less Outliers	699	4.51%	2.88

* = Defined as failing to fit the model and identified by the actual sales price being more than two units of standard deviation from the price predicted based on model.

** = Measured in units of standard deviation of standard normal variable.

14.   As noted *supra*, Dr. Marshall focuses on only frame damaged vehicles in picking his "outliers". As also noted above, this is statistically incorrect when assessing the impact of removing real outliers. However, even ignoring this error *arguendo*, if Dr. Marshall had properly identified the outliers among only frame damaged vehicles, considering only Blue Book value, Dr. Marshall would have identified four such outliers. If he had removed these four outliers and refit my model, the estimated frame damage effect would remain statistically the same.

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Table 2

Impact of Removing All Statistical Outliers Identified Based on Examining Only Frame Damaged Vehicles and Using only Blue Book Value to Predict Sales Price

	Observations	Frame Damage Coefficient	Significance Level**
Original	748	4.56%	2.25
Less Outliers	744	4.42%	2.16

* = Defined within the sample of frame damaged vehicles as those vehicles whose sales price is not predicted reasonably by their Blue Book value and identified by the actual price being more than two units of standard deviation from the price predicted based on the Blue

** = Measured in units of standard deviation of standard normal variable.

15. Dr. Marshall identifies as "outliers" three frame damaged vehicles from among the frame damaged vehicles which have atypically low prices and low Blue Book values. He ignores the fact that vehicles without frame damage can also have low Blue Book values and low prices. If he wanted to test the sensitivity of my model to the inclusion of vehicles with atypically low Blue Book values, he should have removed from the analysis all vehicles with atypically low Blue Book values (i.e., vehicles whose Blue Book value is more than two units of standard deviation below the mean Blue Book value). If he had removed all such vehicles from the analysis population and refit the model, he would have found that the estimate of the effect of frame damage on price would have been essentially the same.[6]

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[6] It should be noted that while frame damage drops slightly, the effect of panel damages increases slightly from 1.60% to 1.72%.

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Table 3

Based on Removing Vehicles Whose Blue Book Values Are Outliers With Respect to Blue Book Value*

	Observations	Frame Damage Coefficient	Significance Level**
Original	748	4.56%	2.25
Less Outliers	720	4.20%	2.13

* = Defined as having an atypically low Blue Book value(and price) and identified by the blue book value being more than two standard deviations below the mean Blue Book value of study population.

** = Measured in units of standard deviation of standard normal variable.

16. Rather than statistically identifying actual outliers. Dr. Marshall's rebuttal analysis actually simply identifies three frame damaged observations with a low sale price and removes them from the analysis population. This makes no sense. I could easily do the converse by identifying observations without frame damage but with a low sales price, or frame damaged vehicles with low Blue Book values but with relatively high prices and remove them from my analysis population. To demonstrate this, I identified three additional "outliers" of the type discussed above and removed two and three of them along with Dr. Marshall's three outliers, and reran the analysis. The results indicate that the estimated effect of frame damage on a vehicle was essentially the same after "outlier" removal (the effect was the same if two outliers were removed and slightly higher if three outliers were removed).

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Table 4

Impact of Removing Dr. Marshall's Three "Outliers" and Dr. Siskin's Two or Three "Outliers"

	Observations	Frame Damage Coefficient	Significance Level*
Original	748	4.56%	2.25
Less Marshall's Outliers and			
2 Siskin's Outliers	743	4.56%	2.22
3 Siskin's Outliers	742	4.95%	2.42

* = Measured in units of standard deviation of standard normal variable.

17. These results show clearly, and contrary to Dr. Marshall's allegation, that the model is stable and there is no statistical evidence that it overstates the impact of an accident on the value of a vehicle even when the repair is done properly.

18. In addition, Dr. Marshall argues that my estimate overstates the frame damage effect due to omitted variable bias.[7] This argument is highly speculative and is backed by no emperical or statistical evidence. He offers two possible situations where omitted variable bias might occur and hypothosizes that inclusion of these omitted variables would reduce the frame damage effect. The two situations are (i) that smokers are more likely than non-smokers to have accidents and, therefore, vehicles that have been in accidents and properly repaired are disproportionately more likely to have been owned by smokers and, moreover, when such vehicles are offered for sale, they retain a smoke odor which diminishes their value, and (ii) that vehicles that have been in accidents and been properly repaired would be more likely to be sold under a red light. With respect to the latter situation, to opine that vehicles that have been in an accident and were repaired properly would be more likely to be sold under a red light is entirely speculative. Why would a vehicle that was repaired properly be more

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[7] See paragraphs 62 through 64 of Dr. Marshall's report.

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likely to be sold under a red light unless vehicles that have been in an accident and been properly repaired are more likely to have serious problems compared to vehicles that were not in an accident? In that case, being under a red light more frequently is simply reflecting the fact that vehicles that have been in accidents and properly repaired are still more likely than non-accident vehicles to have serious problems because they were in an accident (otherwise, why would one expect them to be more likely to have serious problems?).

19. With respect to the first situation, Dr. Marshall's suggestion that smokers are disproportionately more likely to have accidents and, thus, vehicles that have been in accidents and been properly repaired are disproportionately more likely to have been owned by smokers and to retain an odor which diminishes their value is highly speculative. First, there are literally thousands of products and vehicle detailers who claim that smoke odor can be removed from vehicles. Moreover, while a few companies do offer a discount for non-smokers (notably Farmers does not),such discounts tend to be symbolic and immaterial.[8] If insurers such as Farmers considered vehicles of smokers to be significantly more vulnerable to accident than vehicles of non-smokers, economic theory would suggest that they would charge smokers more (or offer discounts to non-smokers), as they do for health insurance and life insurance. If insurance companies judge smoking to have an immaterial effect on the likelihood of being in an accident, then the vehicles of smokers are unlikely to be materially more likely to have been in an accident and properly repaired, and vehicles with residual smoke odor are unlikely to be disproportionately represented in the population of such vehicles.[9]

20. In fact, the most obvious situation (which Dr. Marshall notably fails to speculate about) that would impact the damage estimate is one which would be expected to bias the price of a

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[8] See http://www.insurancenavy.com/blog/how_does_smoking_affect_insurance_rates_premiums

[9] Moreover, it is reasonable to expect that if smoke odor is known to have any effect on the value of a vehicle, any residual odor would likely be removed during the course of repairing the vehicle or preparing it for sale, in order to increase its value.

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damaged vehicle downward (i.e., result in our underestimating the effect of damage on price). That is, the most obvious biasing situation would be one where we classify a vehicle as having damage when it does not have damage or when we classify a vehicle as not having damage when it does. The result of such misclassification would be to underestimate the true effect of damage on the vehicle's price. This follows logically, because a vehicle that has not been damaged is higher in value and including it in the group of damaged vehicles would increase the estimated expected price of a "damaged vehicle" while including a damaged vehicle in the group of undamaged vehicles would lower the estimated expected price of undamaged vehicles. To illustrate the possible impact of miscoding on our frame damage estimate, consider the following. Dr. Rubenfeld identified 21 vehicles he claims we miscoded as having no frame damage when, in fact, he says the inspectors' reports indicated frame damage. Assuming that Dr. Rubenfeld is correct, I reran my model treating those vehicles as frame damaged. The estimate of frame damage rose from 4.56% to 5.57%.

21. Finally, Dr. Marshall argues that I do not use a random sample. He is wrong. The sample drawn for inspection was a proper random sample. Dr. Marshall's allegation actually reflects the fact that my properly drawn random sample was censored, since I had to exclude vehicles that were not sold because they did not meet the reserve price (and since I do not have a sales price and do not know the reserve price).

22. Dr. Marshall argues that, since damaged vehicles will have fewer bidders even if they were repaired properly, if the reserves for damaged vehicles were set at the same level as the reserves for identical undamaged vehicles, there should be fewer damaged vehicles meeting reserve. This is not the case. The reserve price of a vehicle that is identical to a second vehicle except that the first vehicle has been in an accident and properly repaired will, on average, be lower than the reserve price of the second, uninjured vehicle. This is to be expected, because sellers consider a vehicle that has been in an accident to have lost value because of that accident, even if it was properly repaired. Nevertheless, it does not necessarily create a bias in the estimate if bidding on a non-accident and accident vehicle is similarly distributed around the reserve. Consider the following simple example. We have two

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identical vehicles, except that one was in an accident and repaired properly while the other was never in an accident. The bid data and analysis results are presented in the table below. The data in Table 5 shows four vehicles that are identical except that two were in an accident and repaired properly and the other two were not damaged. The damaged vehicles' reserve prices are $500 below those of the non-damaged vehicles. The highest bids for each vehicle are presented. Examining all four of the highest bidders, we see that the average bid for the damaged vehicle is $500 less than for the non-damaged vehicle. Because only the prices of the sold vehicles are known in my study, my analysis contains only the bidders and there is no bias.

Table 5

Hypothetical Demonstrating That, if the Distribution Around Reserve is Independent of Damage, the Censorship of Data Due to Reserve Creates No Bias

Category of Vehicle	Reserve	Highest Bid	Highest Bid	No Censoring	Censored
Damaged	$ 10,000	$ 9,700		$ 9,700	-
Damaged	$ 10,000		$ 10,400	$ 10,400	$ 10,400
Average Price				$ 10,050	$ 10,400
Not Damaged	$ 10,500	$ 10,200		$ 10,200	-
Not Damaged	$ 10,500		$ 10,900	$ 10,900	$ 10,900
Average Price				$ 10,550	$ 10,900
Difference in Average Price				$ 500	$ 500

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